**IN THE CLAIMS**:

Please AMEND claims 1-17 and 35-45;

Please CANCEL claims 18-34; and

Please ADD claim 46, as shown below.

1. (Currently Amended) A method ~~of queuing packets for processing, the method~~ comprising ~~the steps of~~:

~~a.~~ allocating each received packet to at least one arrival queue;

~~b.~~ placing each packet in the allocated queue if said queue is not full, otherwise dropping said packet;

~~c.~~ scheduling packets from the arrival queue to at least one transfer queue;

~~d.~~ responsive to transfer of a packet to a transfer queue, generating an interrupt;

~~e.~~ responsive to receipt of an interrupt, allocating the packet from said transfer queue to one of a plurality of processor queues;

~~f.~~ placing the packet in the allocated processor queue if said queue is not full, otherwise dropping said packet; and

~~g.~~ scheduling packets from the processor queues to be~~for~~ processed~~ing~~.

2. (Currently Amended) A method according to claim 1, wherein packets are received at an input to a plurality of devices.

3. (Currently Amended) A method according to claim 1, wherein at least one device has a plurality of arrival queues.

4. (Currently Amended) A method according to claim 3, wherein each arrival queue is associated with a traffic class, each packet being allocated to the at least one queue in accordance with the traffic class of each packet.

5. (Currently Amended) A method according to claim 4, wherein the traffic class is priority information embedded in the each packet.

6. (Currently Amended) A method according to claim 1, wherein at least one device comprises a plurality of transfer queues.

7. (Currently Amended) A method according to claim 1, wherein the number of transfer queues ~~for each device~~ is less than the number of arrival queues ~~for each device~~.

8. (Currently Amended) A method according to claim 1, wherein the scheduling of packets from the arrival queue to the transfer queue is dependent upon one or more of: the traffic profile; the quality of service requirement; or the characteristics of the transfer queues.

9. (Currently Amended) A method according to claim 1, wherein the transfer queue comprises a device level transfer queue and a processor level transfer queue, wherein the device level transfer queue receives packets from the arrival queue, and the processor level transfer queue receives packets from the device level transfer queue.

10. (Currently Amended) A method according to claim 9, wherein packets are transferred to the processor level transfer queue from the device level transfer queue whenever there is space in the processor level transfer queue.

11. (Currently Amended) A method according to claim 10, wherein packets are never dropped from the transfer queue.

12. (Currently Amended) A method according to claim 1, wherein the processor queues are associated with different priorities.

13. (Currently Amended) A method according to claim 12, wherein the highest priority queue has the lowest drop probability and the lowest latency.

14. (Currently Amended) A method according to claim 1, wherein responsive to receipt of the~~an~~ interrupt ~~from a device~~, a packet is removed from a~~the~~ transfer queue ~~of the device~~ and classified.

15. (Currently Amended) A method according to claim 14, wherein the classification is based on a determination of priority.

16. (Currently Amended) A method according to claim 14, wherein the packet is allocated to a processor queue in accordance with a~~its~~ classification of the packet.

17. (Currently Amended) A method according to claim 14, wherein the packet is placed in the allocated processor queue if said queue is not full, otherwise the packet is dropped.

18-34 (Cancelled)

35. (Currently Amended) An apparatus ~~device adapted for queuing packets to be processed~~, comprising~~the device including~~:

~~a.~~ a processor~~allocating means~~ configured to~~for~~ allocate~~ing~~ a received packet to at least one arrival queue,~~;~~

~~b.~~ wherein the processor is~~placement means~~ configured to~~for~~ place~~ing~~ each packet in the allocated queue if said queue is not full, otherwise dropping said packet,~~;~~

~~c.~~ wherein the processor is~~scheduling means~~ configured to~~for~~ schedule~~ing~~ packets from the arrival queue to at least one transfer queue,~~; and~~

~~d.~~ wherein the processor is~~interrupt means~~, responsive to transfer of a packet to a transfer queue, configured to~~for~~ generate~~ing~~ an interrupt,~~;~~

~~e.~~ wherein the processor is~~allocation means~~, responsive to receipt of an interrupt, configured to~~for~~ allocate~~ing~~ the packet from said transfer queue to one of a plurality of processor queues,~~;~~

~~f.~~ wherein the processor is~~placement means~~ configured to~~for~~ place~~ing~~ the packet in the allocated processor queue if said queue is not full, otherwise dropping said packet,~~;~~ and

~~g.~~ wherein the processor is~~scheduling means~~ configured to~~for~~ schedule~~ing~~ packets from the processor queues to be~~for~~ processed~~ing~~.

36. (Currently Amended) The apparatus~~A device~~ according to claim 35 further comprising~~including~~ a plurality of arrival queues.

37. (Currently Amended) The apparatus~~A device~~ according to claim 36, wherein ~~in which~~ each arrival queue is associated with a traffic class, each packet being allocated

to the at least one queue by the processor~~allocation means~~ in accordance with the traffic class of each packet.

38. (Currently Amended) The apparatus~~A device~~ according to claim 35 further comprising~~including~~ a plurality of transfer queues.

39. (Currently Amended) The apparatus~~A device~~ according to claim 35, wherein ~~in which~~ the transfer queue comprises a device level transfer queue and a processor level transfer queue, the device level transfer queue configured~~being adapted~~ to receive packets from the arrival queue, and the processor level transfer queue configured~~being adapted~~ to receive packets from the device level transfer queue.

40. (Currently Amended) The apparatus~~A device~~ according to claim 39, wherein ~~being adapted such that~~ packets are transferred to the processor level transfer queue from the device level transfer queue whenever there is space in the processor level transfer queue.

41. (Currently Amended) The apparatus~~A device~~ according to claim 40, wherein ~~further adapted such that~~ packets are never dropped from the transfer queue.

42. (Currently Amended) The apparatus~~A device~~ according to claim 35, wherein ~~in which~~ the processor queues are configured~~adapted~~ to be associated with different priorities.

43. (Currently Amended) The apparatus~~A device~~ according to claim 35, wherein the processor is ~~further including transfer means~~ configured~~adapted~~, responsive to receipt of the~~an~~ interrupt, to remove a packet from a~~the~~ transfer queue ~~of~~, and ~~provide such~~ to classify the packet~~a classification means for classification~~.

44. (Currently Amended) The apparatus~~A device~~ according to claim 35, wherein the processor is configured ~~further including means~~ to allocate the packet to a processor queue in accordance with a~~its~~ classification of the packet.

45. (Currently Amended) The apparatus~~A device~~ according to claim 44, wherein ~~in which~~ the ~~placement means are adapted such that the~~ packet is placed in the allocated processor queue if said queue is not full, and otherwise the packet is dropped.

46. (New) A computer-readable storage medium encoded with instructions that, when executed on a computer, perform a process, the process comprising:

allocating each received packet to at least one arrival queue;

placing each packet in the allocated queue if said queue is not full, otherwise dropping said packet;

scheduling packets from the arrival queue to at least one transfer queue;

responsive to transfer of a packet to a transfer queue, generating an interrupt;

responsive to receipt of an interrupt, allocating the packet from said transfer queue to one of a plurality of processor queues;

placing the packet in the allocated processor queue if said queue is not full, otherwise dropping said packet; and

scheduling packets from the processor queues for processing.